



Michael Wabaunsee

Summer 2013

NASA Johnson Space Center

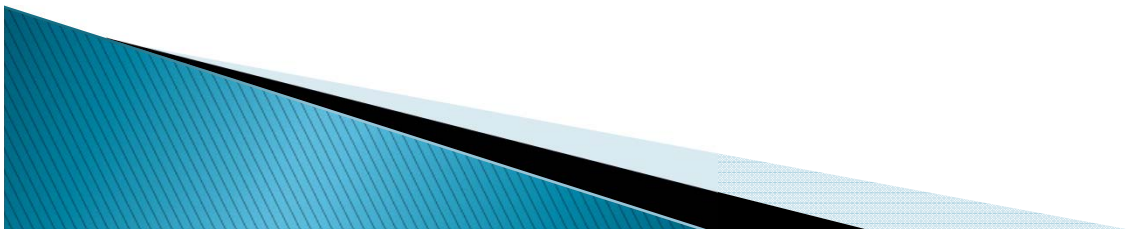
Avionic System Division

Human Interface Branch (EV3)

Mentor – Mr. Oron Schmidt

Agenda

- About Myself
- Light Emitting Diode (LED) Project
- Network Connectivity Project
- Volunteer Solar Tree Project
- Lectures and Tours
- Outside Activities
- Questions



About Myself



- Mescalero
Apache/Jemez
Pueblo
- Mescalero New
Mexico



- Graduated from Southwestern Indian Polytechnic Institute (SIPI) with an AAS degree in Instrumentation and Control Systems



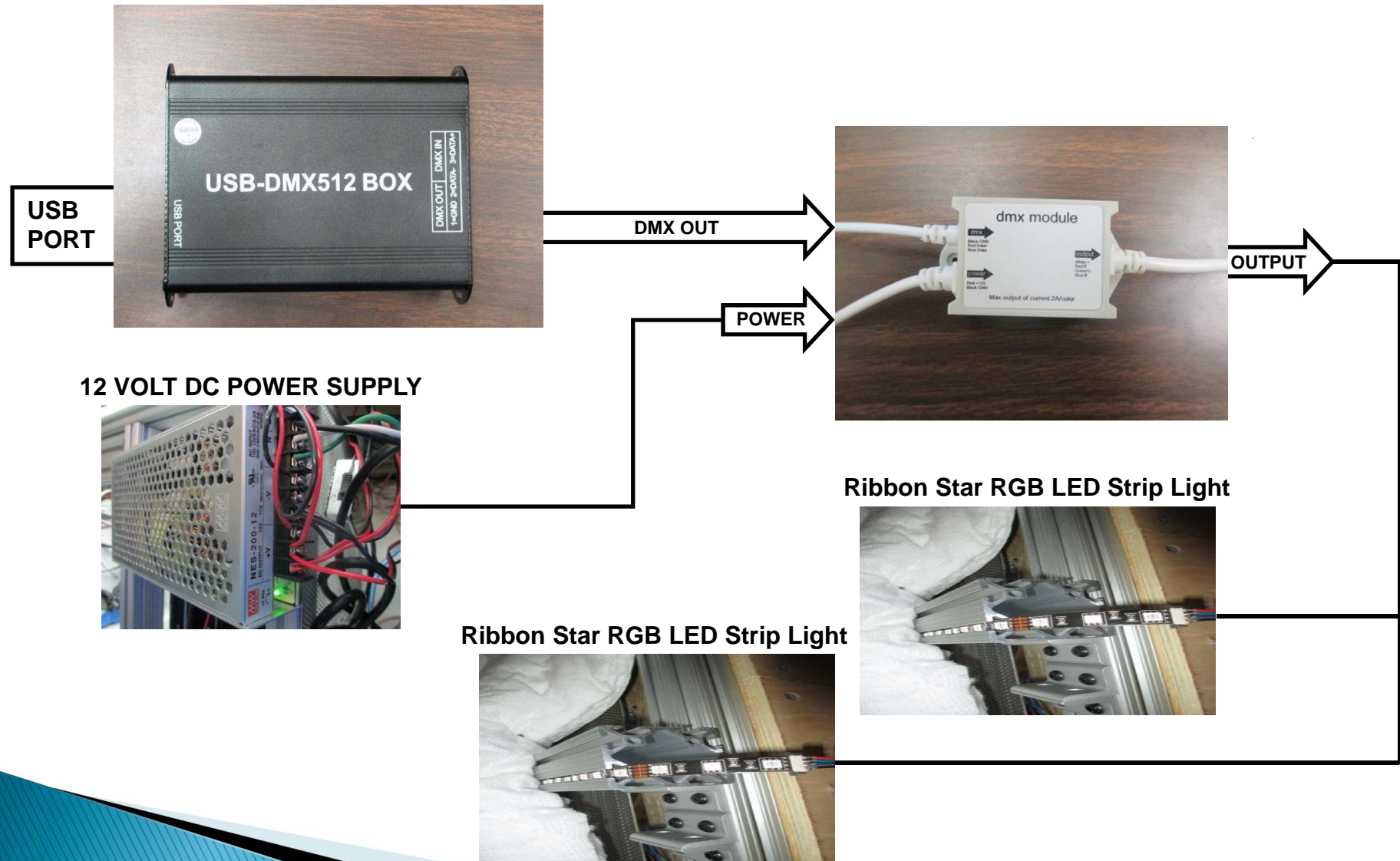
- Attending the University of New Mexico
- Major BS Electrical Engineering

Light Emitting Diode Project

- Lighting of the crew quarters
- Finding ways to improve lighting
- Simulate an Earth lighting environment
- Create a network of Light Emitting Diodes (LED) strip lighting for the quarters

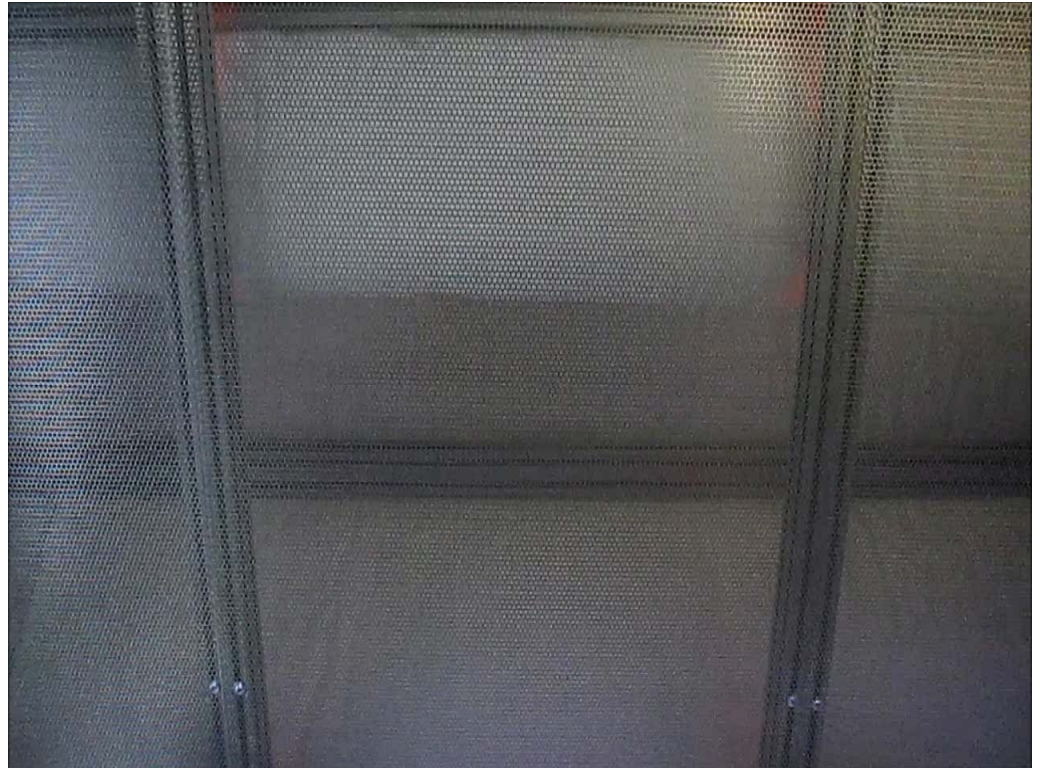


LED Strip Light Wiring Diagram



Light Emitting Diode Project

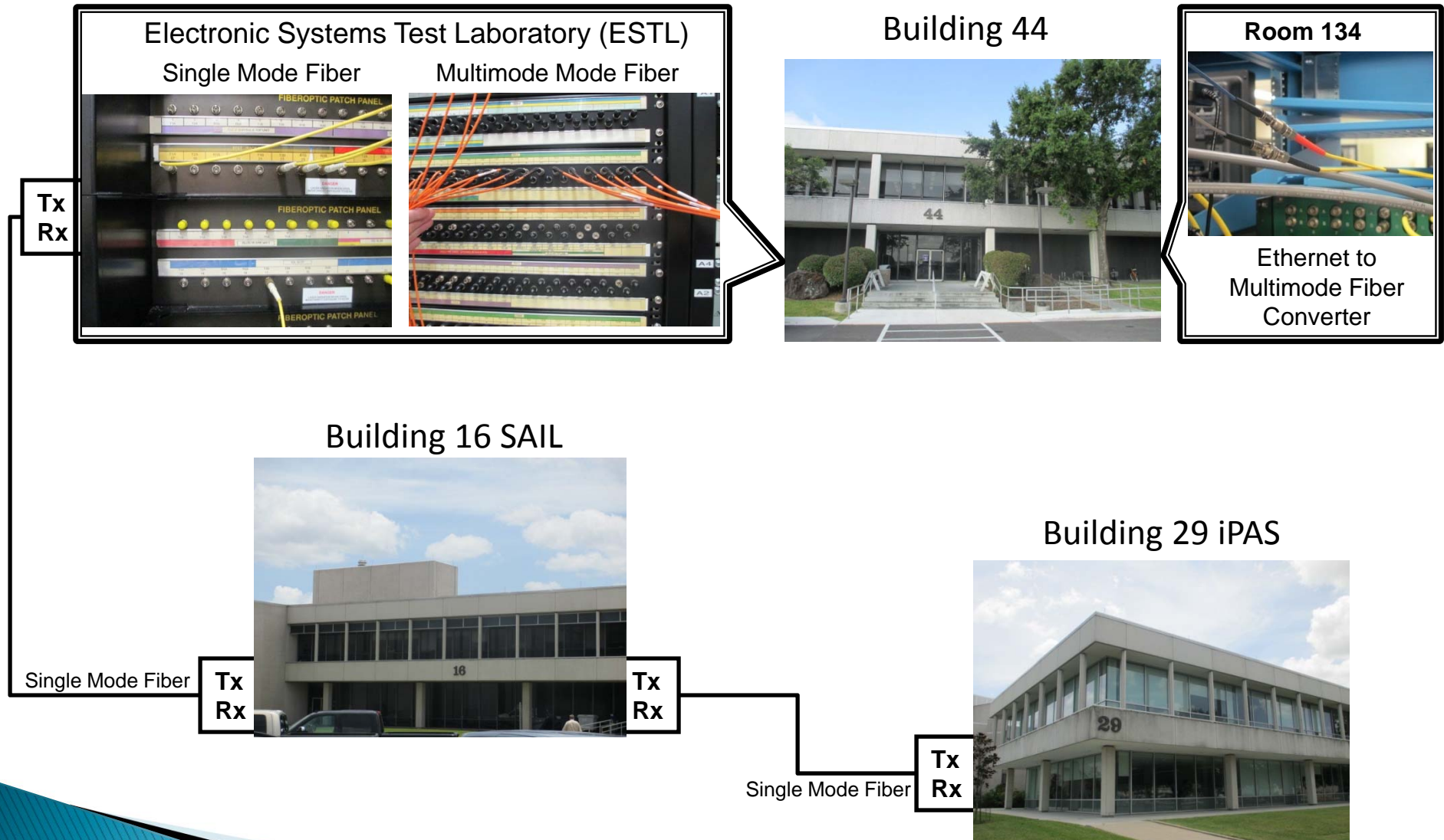
- Researched equipment needed for the project
- DMX512 control box
- DMX slave switch module for controlling the fading and shades of the red, green and blue (RGB) LEDs
- Software for controlling the strip lights
- Placement and installation



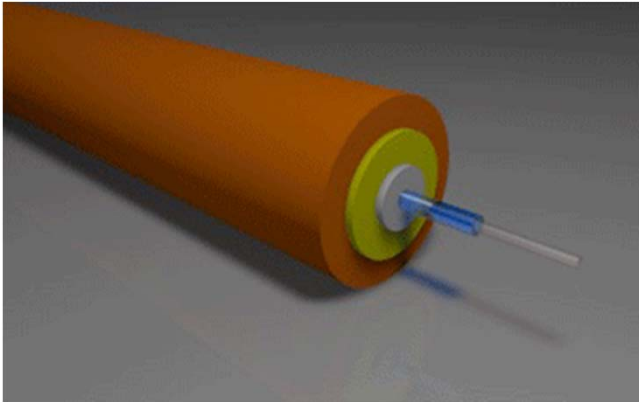
Future Work

- An array of strip lighting
- Simulate 24 - hour circadian rhythm
- Testing of the light intensity and frequency vs. time
- Generate documentation of the procedure for software controlling the lights

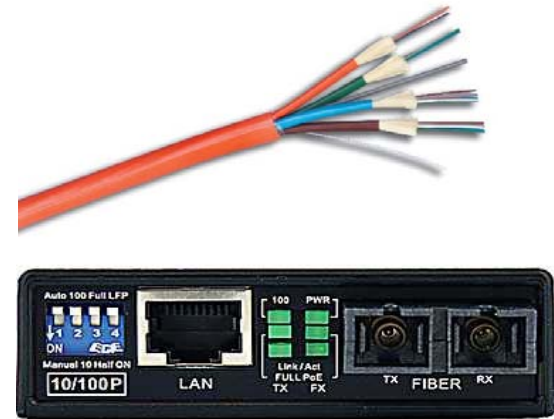
Network Connectivity Diagram



Network Connectivity Conclusion and Future Work

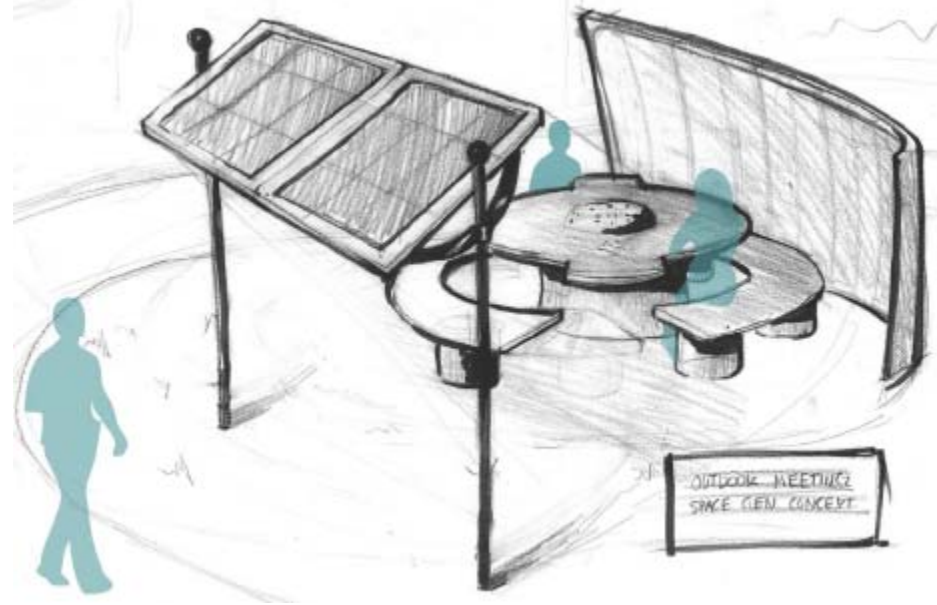


- Fiber
- Connections
- Multi
- Single
- Ethernet
- Converters
- Telepresence Video Conferencing



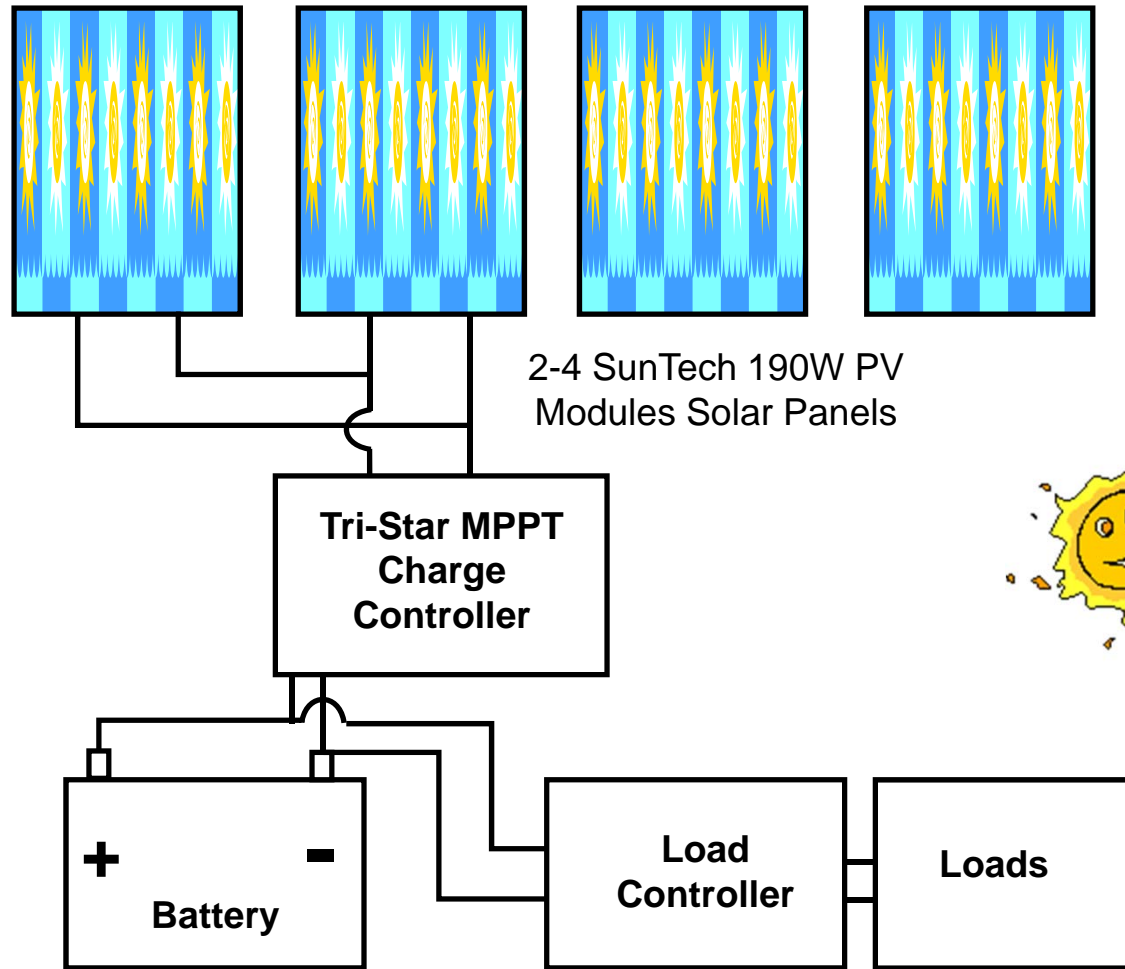
Solar Tree Project Design

- Sustainability Partnership
- Became involved because of my interest in renewable energy
- Involves many different disciplines
- Work together with many different teams

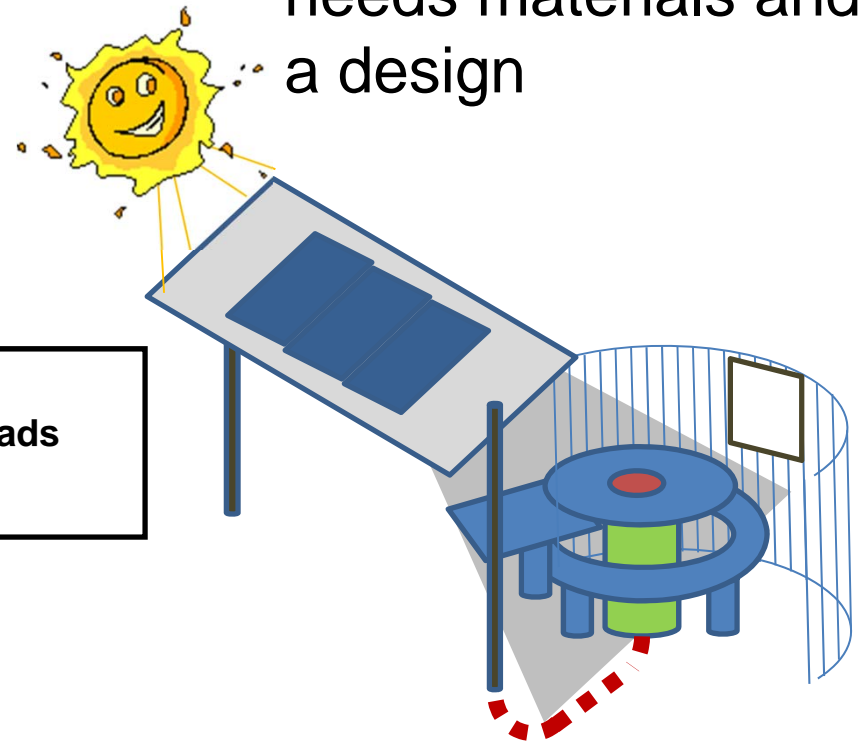


Volunteer Solar Tree Project

Wiring Diagram



- Helped with wiring Connections
- Worked on a wiring diagram
- The project stills needs materials and a design



Lectures and Tours

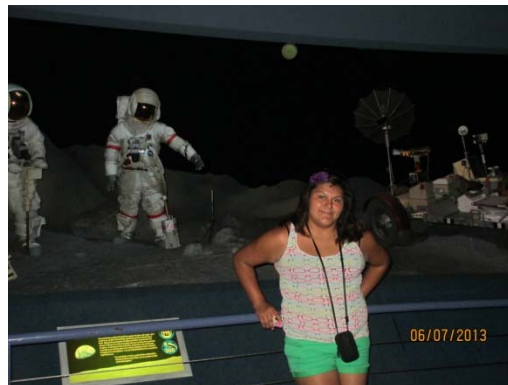


- Neutral Buoyancy Lab (NBL)
- Space Suit Lab
- Mission Control Center (MCC)
- Flight Deck of the Future
- Ginger Kerrick lecture
- EA All Hands Presentation
- SCI-FI Writers Presentation



Michael Wabaunsee

Outside Activities



Acknowledgements

Building 44

Oron Schmidt

George Salazar

Maxwell Haddock

Chatwin Lansdowne

Helen Neighbors

Shawn Schumacher

Matt Salazar

Genevieve Chevalier

Solar Tree Project

Kim Reppa, Terry Tri, Henry Wyndon, Mike

Ewert, Penney Stanch, Michelle Fraser-Page,

Carson Stanch, Jo Aiken, Ivan Ramirez, Carlo

Bocatto, Brian Johnson, Demetrius Roberts, Tom

Scarcella, Lynne Barends, Ruben Zavala

QUESTIONS?

